

# Strategy Research Project

## Assigning Senior Leaders Using Strategic Leadership Competency Matching

by

Colonel Scott T. Nestler  
United States Army



United States Army War College  
Class of 2013

### DISTRIBUTION STATEMENT: A

Approved for Public Release  
Distribution is Unlimited

This manuscript is submitted in partial fulfillment of the requirements of the Master of Strategic Studies Degree. The views expressed in this student academic research paper are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

The U.S. Army War College is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104, (215) 662-5606. The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

REPORT DOCUMENTATION PAGE				Form Approved OMB No. 0704-0188	
<p>The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. <b>PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.</b></p>					
1. REPORT DATE (DD-MM-YYYY) xx-03-2013		2. REPORT TYPE STRATEGY RESEARCH PROJECT		3. DATES COVERED (From - To)	
4. TITLE AND SUBTITLE Assigning Senior Leaders Using Strategic Leadership Competency Matching				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Colonel Scott T. Nestler United States Army				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Dr. Steven J. Gerras Department of Command, Leadership, and Management				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army War College 122 Forbes Avenue Carlisle, PA 17013				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION / AVAILABILITY STATEMENT Distribution A: Approved for Public Release. Distribution is Unlimited.					
13. SUPPLEMENTARY NOTES Word Count: 5908					
14. ABSTRACT <p>This paper proposes a decision support system (DSS) to assist in assigning senior leaders to positions using matching of strategic leadership competencies. It takes a holistic, portfolio-based approach to determine the best overall assignment of available officers to all positions. Additionally, it allows decision makers to impose additional constraint and communicates the impact of such decisions on the resulting quality of the overall set of assignments. The use of visualization allows for rapid comprehension of information in a short period of time. The current assignment process and some of its shortcomings are considered briefly. A small example is provided to illustrate how the methodology could be used. Some extensions to incorporate other considerations are mentioned, but not explored in depth.</p>					
15. SUBJECT TERMS Decision Support System, Assignment, Optimization, Information Visualization, Radar Plot, Portfolio					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT  UU	18. NUMBER OF PAGES  38	19a. NAME OF RESPONSIBLE PERSON
a. REPORT UU	b. ABSTRACT UU	c. THIS PAGE UU			19b. TELEPHONE NUMBER (Include area code)



# USAWC STRATEGY RESEARCH PROJECT

## **Assigning Senior Leaders Using Strategic Leadership Competency Matching**

by

Colonel Scott T. Nestler  
United States Army

Dr. Steven J. Gerras  
Department of Command, Leadership, and Management  
Project Adviser

This manuscript is submitted in partial fulfillment of the requirements of the Master of Strategic Studies Degree. The U.S. Army War College is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104, (215) 662-5606. The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

The views expressed in this student academic research paper are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

U.S. Army War College  
CARLISLE BARRACKS, PENNSYLVANIA 17013



## **Abstract**

Title: Assigning Senior Leaders Using Strategic Leadership Competency Matching

Report Date: March 2013

Page Count: 38

Word Count: 5908

Key Terms: Decision Support System, Assignment, Optimization, Information Visualization, Radar Plot, Portfolio

Classification: Unclassified

This paper proposes a decision support system (DSS) to assist in assigning senior leaders to positions using matching of strategic leadership competencies. It takes a holistic, portfolio-based approach to determine the best overall assignment of available officers to all positions. Additionally, it allows decision makers to impose additional constraint and communicates the impact of such decisions on the resulting quality of the overall set of assignments. The use of visualization allows for rapid comprehension of information in a short period of time. The current assignment process and some of its shortcomings are considered briefly. A small example is provided to illustrate how the methodology could be used. Some extensions to incorporate other considerations are mentioned, but not explored in depth.





## **Assigning Senior Leaders Using Strategic Leadership Competency Matching**

In theory, the distribution planning and assignment processes place the right Soldier with the right skills at the right place at the right time.

—How The Army Runs: A Senior Leader Reference<sup>1</sup>

### **Background**

#### **Motivation**

While the existing system for assigning senior Army officers to positions works, there is room for improvement in the process. Researchers have suggested a number of ways that the Army can better manage the talent of its leaders to maximize the effectiveness of the Army's people, including an overhaul of the assignment system.<sup>2</sup> By taking into account relatively recent developments regarding competencies for strategic leaders, and incorporating the use of visualization, one possible way that this could be accomplished is presented in moderate detail.

#### **Outline**

Before delving into the proposed methodology, the key terms and core ideas that need to be considered and understood as a foundation are reviewed. Then, the current process used by the Army to assign senior leaders to positions (jobs) is examined, to include highlighting of some potential shortcomings of this approach. Next, the notion of competencies in general is discussed, and a framework for evaluating them in the context of strategic leadership is selected. A portfolio-based approach using competency matching between individuals and the potential positions to which they could be assigned to select the best overall set of assignments follows. This includes the use of a straightforward visualization technique that can be used in conjunction with more quantitative measures to assist decision makers in forming assignment decisions

for senior leaders. Before concluding, a small, illustrative example of the methodology is provided.

### Senior Leaders and Strategic Leadership

The Army's Senior Leader Development (SLD) office, established in 2006, has the mission, "to assist the Chief of Staff, Army and the Secretary of the Army, with the development, utilization, and management of our strategic leadership, a combined force of general officers and active duty ACC [Army Competitive Category] Colonels,..."<sup>3</sup>

Based on the organization of SLD, with two subordinate organizations, the General Officer Management Office (GOMO) and Colonels Management Office (COMO), it appears that the Army considers *senior leaders* to be (full) colonels and general officers. That is the definition used for the purposes of this paper. Are senior leaders the same thing as *strategic leaders*? Although these terms are sometimes used interchangeably in the literature, this is not the case. Gerras and his colleagues highlight that there is a difference between a "leader at the strategic level" and a "strategic leader".<sup>4</sup> Using the example of the Joint Staff J-5, the Director for Strategic Plans and Policy, they highlight the key difference is whether, and to what degree, the leader has "influence on the military enterprise."<sup>5</sup> All strategic leaders do have this influence at the enterprise level, while most senior leaders do not. While this may be relevant from a technical perspective, it is less useful from a functional standpoint. Even if a colonel or general officer does not meet the strict definition of a strategic leader, as a senior leader they are likely advising or working with strategic leaders on a regular basis.

A group of RAND researchers addresses the fact that not all senior leaders are fully qualified for their positions.<sup>6</sup> They acknowledge that many positions require experience in more than one functional or operational domain, and that developing a

corps of senior leaders with the required combinations of knowledge is difficult.<sup>7</sup> So, if the Army may not have a collection of officers who are ideally suited for each senior leader position, then making the best possible set of assignments becomes all the more critical.

### Current Assignment Process

Before attempting to provide a new way to assign senior leaders (colonels or general officers), it is important to first review the current process that the U.S. Army uses for this task. Based on conversations with human resources (HR) managers and leaders in SLD and COMO, the current assignment process for senior leaders follows a framework developed to meet General Raymond T. Odierno's, Chief of Staff of the Army (CSA), intent regarding leader development.<sup>8</sup> Broadly, in his Marching Orders, one of the CSA's priorities is for the Army and its leaders to, "adapt leader development to meet our future security challenges in an increasingly uncertain and complex strategic environment."<sup>9</sup> Also, he expects leaders will "build agile, effective, high performing teams," and attain the characteristics of being "adaptive and innovative" and "flexible and agile."<sup>10</sup>

To place the assignment of people to positions (or "faces to spaces") in context, it is useful to briefly consider the Military Human Resource Management (MHRM) lifecycle model. The MHRM is an updated version of the Soldier Life Cycle Model shown in Figure 1, and includes eight functions necessary for personnel management.<sup>11</sup> This paper primarily looks at the third lifecycle function – distribution, but also considers the fourth – development. The distribution function focuses on assigning available Soldiers to units based on Army requirements and priorities. Policies and procedures for enlisted

Soldiers and officers, especially senior leaders, do differ somewhat; however, all of them have at their core guidance from and priorities of the CSA.

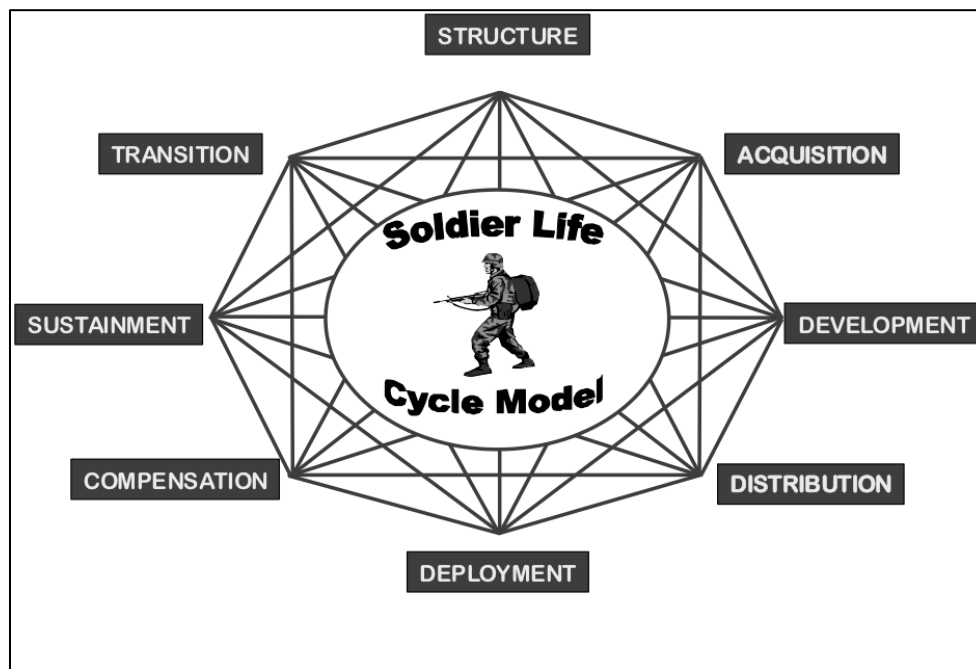


Figure 1. Soldier Life Cycle Model

In alignment with these priorities, the CSA has directed that assignments consider a number of factors when it comes to the assignment of each senior leader. In addition to considering the officer's stated preferences for assignment (in terms of both duty position and location), the HR managers consider their current status with regard to *Operational* assignments (i.e. to deployable units or deployment as an individual augmentee), *Joint* qualification-- a combination of schooling and experience on the Joint Staff, a combatant command staff, or in the Office of the Secretary of Defense (OSD), and service at the *Enterprise* level (primarily on the Army Staff or Training and Doctrine Command (TRADOC)). This includes consideration from two perspectives – one directed at the development of the individual officer, and the other focused on maximizing benefit or utility to the Army. Additionally, the executive agents and/or

personnel proponents (usually general officers) have input into the assignment of colonels in their branch or functional area.

Under the current process, when a position requiring a senior leader needs to be filled, the SLD Office has to look at the files of officers meeting the requirements of the position who are eligible for assignment during the time period under consideration. For the majority of senior leaders, but not all, this is the summer rotation cycle. Additionally, there are other statutory and policy constraints on assignments. Because the focus of this paper is the assignment of strategic-level leaders, it is essential to consider the requirement that at least fifty percent of all graduates of the National War College and the Dwight D. Eisenhower School for National Security and Resource Strategy must go to a joint assignment.<sup>12</sup> A further complication results from the fact that 24 percent of all positions for colonels (881 out of 3726 in FY13) are not branch-specific.<sup>13</sup> Instead, they specify that any colonel belonging to a broad group may fill the position. For example, any colonel may fill a position indicated as 01A (Branch Immaterial). Similarly, any Armor or Infantry colonel may fill a position listed as 03A (Maneuver Immaterial). There are others such peculiarities as well; the specifics are not central here. It is enough to realize that such complications exist and must somehow be handled.

After considering these factors, the HR manager prepares a slate of proposed assignments for presentation to the decision maker by the Directors of COMO, GOMO, and SLD. During the spring of each year, these meetings occur every week or so. In the case of colonels, the decision maker is the Army Vice Chief of Staff (VCSA); for general officers, it is the CSA.<sup>14</sup> The time available for these very senior leaders to make these weighty assignment decisions is extremely limited, as it competes with other equally

vital or mandatory duties. For this reason, any decision support system (DSS) to assist in assignment of senior leaders must be intuitive, easy to use, and not require extensive training or education.

### A Proposal: Assignment Using Competency Matching

#### Competencies

The proposed method attempts to determine the best match between the competencies required by each specific senior leader position with the competencies possessed by those officers eligible for assignment. In general, “a competency is an underlying characteristic of an individual which is causally related to effective or superior performance in a job.”<sup>15</sup> Competency approaches, concerned with the functions leaders must perform to make themselves (and their organizations) effective, have only been widely used for about 20 year.<sup>16</sup> Horey and Falleson claim, “Competencies have become a more prevalent method of identifying the requirements of ... leadership positions, rather than job or task analysis techniques, because they provide a more general description of responsibilities associated across these positions.”<sup>17</sup>

In general, KSAs (knowledge, skills, and attributes) or KSAOs (knowledge, skills, abilities, and other characteristics) form the main elements of a competency framework.<sup>18</sup> *Knowledge* is information that a person knows; it includes theories, facts, and procedures, plus the ability to apply this information in varied situations. *Skills* relate to a person’s ability to select and implement the right technique at the right time. Skills can be developed through training and practice, either in the classroom or on the job. Finally, *attributes* are inherent characteristics or qualities of a person. The thoughts, actions, or feelings of an individual often express attributes. Taken together, these three elements are what make up a competency.<sup>19</sup> Competencies should be: observable;

measureable, i.e., linked to workplace, academic environment, and other life experiences; transferable; and based on performance.<sup>20</sup>

There are a number of competency frameworks developed by the military services and other organizations that are related to leader effectiveness. For example, Applebaum and Paese describe the nine roles of strategic leadership; they also compare their list to those identified in others' leadership models, like Covey, Belbin, Gallup, and Mintzberg.<sup>21</sup> Zook proposes a broad, competency-based human capital management (HCM) system for the Army.<sup>22</sup> One recent study by Horey and Falleson shows much commonality between the various services' frameworks.<sup>23</sup> The Army Research Institute (ARI) conducted a systemic examination of the Army's description of leadership for the Center for Army Leadership (CAL); the resulting leader model contains eight competencies.<sup>24</sup>

WholeSoldier Performance is an ongoing effort that uses a multiattribute model to measure the performance of junior enlisted Soldiers in the Army, for whom there is currently no formal performance appraisal system in place.<sup>25</sup> This model contains 12 competencies in three domain groups—moral, cognitive and physical, from the Army's Training and Doctrine Command (TRADOC) Human Dimension (HD) Study. A variant for officers called WholeOfficer includes ten competencies; some of them were the same as in WholeSoldier, while others differed in recognition of the differing roles of Soldiers and junior officers. Similarly, a value-focused model for senior leaders could be expected to differ somewhat more.

For this DSS, the set of strategic leadership competencies chosen must be relatively small, to permit a supporting visual aid. While the WholeSoldier and

WholeOfficer Performance models are a bit more complex than desired, they could still be visualized using the method presented here. Also, the number of competencies that might exist in a variant of that model for senior leaders might not have 10 or 12 competencies; the “correct” number would be based on achieving a balance between the desirable properties of completeness, non-redundancy, decomposability, operability, and small size.<sup>26</sup> Operability, which Kirkwood describes as a property “that it (the model) is understandable for the persons who must use it,” and small size are two characteristics of particular interest to military leaders.<sup>27</sup> Leaders must identify with the competencies included in the model; also, any DSS must not create an undue organizational burden or implementation will be difficult or unlikely.

As presented above, there are a number of frameworks from which to select. However, the ARI/CAL study stresses, “... competency models are not developed to represent wholly comprehensive or absolute depictions of leader effectiveness. Rather, they provide key areas of leader functioning that should lead to effective organizational outcomes.”<sup>28</sup> In other words, at some point, pick one that is good enough for the purpose at hand and move forward.

In 2003, a team of faculty members and students at the Army War College responded to a tasking from the CSA to “identify the strategic leader skill sets for officers required in the post-September 11<sup>th</sup> environment.”<sup>29</sup> After reviewing the strategic leadership literature, interviewing leader development experts from both the military and the business world, and studying the Army’s leader development system, they condensed the “... essence of strategic leadership into six metacompetencies...”<sup>30</sup> These six metacompetencies are *identity*, *mental agility*, *cross-cultural savvy*,



*interpersonal maturity, world-class warrior, and professional astuteness.* Table 1 provides the metacompetencies and their definitions. Technically, these are not competencies per se, but rather metacompetencies. According to Hall, a metacompetency is “a competency that is so powerful that it affects the person’s ability to acquire other competencies.”<sup>31</sup>

Table 1. Definitions of Metacompetencies in Wong et al, 2003

<b>Metacompetency</b>	<b>Description</b>
Identity	The ability to gather self-feedback, to form accurate self-perceptions, and change one’s self-concept as appropriate.
Mental Agility	The ability to scan and adjust learning based on the environment, with aspects of cognitive complexity, improvisation, and lightness found in the strategic leadership literature.
Cross-Cultural Savvy	The ability to understand cultures beyond one’s organizational, economic, religious, societal, geographical, and political boundaries.
Interpersonal Maturity	Many of the interpersonal skills required of strategic leaders are basically the same attributes used at the organizational level applied at a higher level. However, several interpersonal skills are qualitatively different at the strategic level. Empowerment, consensus building, and negotiation are key skills for strategic leaders.
World-Class Warrior	Strategic leaders understand the entire spectrum of operations at the strategic level, to include theater strategy; campaign strategy; joint, interagency, and multinational operations; and the use of all the elements of national power and technology in the execution of national security strategy.
Professional Astuteness	Strategic leaders understand that they are no longer (just) members of a profession, but leaders in the profession as the Army serves the Nation. They see the need to develop the future leaders of the profession, work with stakeholders, and communicate this responsibility to future leaders of the profession.

Further information on these metacompetencies can be found as an appendix in Gerras’ *Strategic Leader Primer*.<sup>32</sup> Also, from this point onward, the term competency will be

used instead of metacompetency, as the intent is not to limit the proposed approach to this particular framework. Although this may not be the ideal model of senior leader competencies, it is more than adequate for the purpose here.

### Optimization

Recall that the goal here is to determine the best match between the competencies required by each specific senior leader position with the competencies possessed by those officers eligible for assignment. In general terms, optimization seeks to find the “best” solution to a problem that is deterministic in nature. At a slightly deeper level, an optimization model consists of three main components: (1) an *objective function* that one wishes to be maximized (or minimized); (2) some number of *decision variables*, or choices over which the decision maker has control; and (3) a set of *constraints*, which place limits on the allowable values of the decision variables.

The purpose of this paper is not to develop a formal optimization model for the assignment of senior leaders, but rather to sketch out a way in which this could be done, in order to provide a DSS for the Army’s senior leaders. In this instance, the objective function would consist of some weighted combination of objectives, maximizing the degree of competency “fit” between officers’ competencies and the positional demands. For example, it could maximize a function (e.g. average) of individual preferences, where the weights correspond to the relative importance of the competing multiple objectives.

In this instance, the decision variables are generally straightforward – binary (yes/no), with a 1 representing the assignment of officer  $i$  to position  $j$ , and 0 indicating no such assignment. Constraints would include restrictions like the following:

- Only assign one officer to each position; this constraint may seem trivial, but is necessary to get a valid assignment.
- Ensure that each position is filled, unless there are not enough officers to fill all available positions.
- Any statutory and policy restrictions, as previously identified.

### Portfolios

To achieve the goal of finding the best competency match between position and candidates, the focus is on what is best for the Army as a whole, not each position or officer in isolation. Traditionally, the term portfolio characterizes a collection of work product, e.g., the drawings and paintings of an artist, or else the large, flat case used to carry the work product. More recently, the definition has been expanded to include a collection of some number of items. For example, a financial portfolio is a collection of stocks, bonds, and other investment instruments. Similarly, a project portfolio is a group of projects selected for investment and development by an organization.

The concept of portfolio optimization (or selecting the “best” portfolio) generally traces its roots to Harry Markowitz, whose work on Modern Portfolio Theory (MPT) in the 1950s earned him a Nobel Prize in Economics in 1990. His key observation was about the trade-off between the expected return (reward) and risk, usually measured by variance or standard deviation (variability), of an investment portfolio. His method, known as Modern Portfolio Theory, presented a way of determining the least risky portfolio that met a specified expected rate of return.<sup>33</sup> Since then, there have been countless variants on his method, most of which focus on different ways to measure risk. In the 1980s and 1990s, companies extended this idea to selection of projects and

products within their long-term capital budgeting process.<sup>34</sup> Essentially, a firm considers all available investment opportunities and selects the combination of projects that resulting in the best-expected outcome, within both an acceptable level of risk and the investment resources (usually funds) available to them. Management should do this because the projects are often correlated with one another; viewing them individually may not present a true picture.<sup>35</sup> As firms do not only have single projects, portfolio optimization is crucial.

In the past few years, the Department of Defense (DoD) has further extended the idea to include portfolios of capabilities. DoD Directive 7045.20 (“Capability Portfolio Management”) directs that DOD Components (which include the Military Departments, like the Army) “shall use capability portfolio management to advise (leaders) on how to optimize capability investments across the defense enterprise (both materiel and non-materiel) and minimize risk in meeting the Department’s capability needs in support of strategy.”<sup>36</sup> It would seem that applying the idea of portfolio optimization to the assignment of senior leaders in the Army is a natural extension of this guidance. As opposed to picking the best officer for one available job, and then moving on to the next position needing to be filled, a portfolio approach would consider all positions at once. The best solution would be one that results in the best overall assignment of officers to positions, rather than the current, sequential process.

Support for a portfolio approach to the assignment of senior leaders include several reasons identified by Cooper, Edgett, and Kleinschmidt for project portfolios, namely: (1) portfolio management is about making strategic choices; (2) choices that leaders make today in this regard determine what the enterprise looks like several years

in the future; and (3) portfolio management is about the allocation of scarce resources, i.e., senior leaders with particular strategic leadership competencies.

#### An Earlier Attempt -- Senior Leader Job Competency Survey

This is not the first proposal to using competency matching for assignment purposes; the concept in general terms is not entirely new and unique. In fact, the Army made an initial attempt at something close to this approach in the recent past. However, that effort failed; this approach aims not to fall victim to the same shortfalls. To support this effort, the Senior Leader Job Competency Survey in 2007 had the goal of “recording job competencies associated with immaterial colonel positions across the Army.”<sup>37</sup> The objectives of the survey were to: (1) identify job competencies associated with selected colonel positions; (2) document job competencies for positions based on input from the officer currently serving in the position; and (3) examine and analyze the job competencies identified for each position to determine future officer development requirements. SLD then expanded the survey in subsequent years to record competencies associated with the officer versus the position.

SLD developed the survey content, in conjunction with RAND. Competencies used in the survey come from several sources, including: DA Pam 600-3, Commissioned Officer Professional Development and Career Management, for the Army Branch/Functional competencies; the Strategic Plan for Joint Officer Management for the Joint, Interagency, Intergovernmental and Multinational (JIIM) competencies; and FM 6-22, Army Leadership, for the Core Leader Competencies. The remaining competencies derive from a RAND Survey of General Officer positions 37F<sup>38</sup> shows a listing of the (at least) 20 JIIM competencies identified by the survey. The lower left portion indicates the four levels (Expertise, Experience, Exposure, None) that

Senior Leader Job Competencies Survey

1

2

3

4

Section 1A – Job and Core Leader Competencies - JIIM (Joint, Interagency, Intergovernmental and Multi-National), Battle Command

In this section, we need to have your assessment of the competency requirements for your position. Your assessment should not be a reflection of the competencies that you have gained over your Army career, nor should it be an assessment of the competencies the organization requires to complete the mission. Instead, we need your assessment of the value each of these competencies will have on the position you currently occupy. For each competency, please rate its value on a scale from Expertise to None using the rating scale as your guide. Apply your ratings as if you were specifying the competency requirements for your successor who will have the same mission, responsibilities and operating location that you currently have. If, in your estimation, there are valuable competencies within these classifications that are absent, use the "Other" section at the end of the survey to list and rate these competencies.

[Learn More](#)

Expertise

Requires deep knowledge; normally developed from multiple assignments, training, and throughout a career

Experience

Requires practical, user level understanding normally developed from hands-on participation in a prior assignment, training, or education

Exposure

Requires only general familiarity and understanding of key concepts

None

Proficiency in the competency is not required

Expertise

Experience

Exposure

None

None

Click on each competency for a full description.

Command and Control

Air Operations

Information Affairs

Stability Operations

Battlespace Awareness

Strategic Deterrence

Shaping and Security Cooperation

Homeland Defense

Access and Access Denial Operations

Net-centric Operations

Space Operations

Maritime Littoral Operations

Force Management

Non-traditional Operations

Information Operations

Interagency Integration

Force Generation

Protection

Land Operations

Civil Support

Figure 2. JIIM Competencies from 2007 RAND Senior Leader Survey

respondents identified for the position they were currently filling. Note that there are also three additional screens of competencies available for rating.

This attempt at competency matching failed for two primary reasons. First, the number of competencies identified (estimated at about 75) was too large, which resulted in an overly onerous demand on time that resulted in a low response rate. In this effort (for three branches or functional areas), assessment of competencies was completed for only 70% of the positions.<sup>39</sup> Additionally, there was little incentive to those out in the field to complete the survey; they could not see the benefit to them or their organization. It was just another survey they were asked or directed to complete.<sup>40</sup>

### An Integrated Framework

In order to avoid the problems encountered with the previous attempt at competency matching and improve the chances for success, some scaffolding is proposed for the DSS. Archer and Ghasemzadeh's statement, "Tools for decision support, not decision making tools, are emphasized, since the thought processes in decision making should be supported and not supplanted by the tools used" is useful here.<sup>41</sup> They provide eleven propositions that describe the desirable characteristics of a DSS for use in project portfolio selection. Many of them apply directly to a portfolio assignment model; others do not directly apply in this situation.

Five key features are appropriate to consider when constructing assignment portfolios for Army senior leaders.

- Users should not be overloaded with unneeded data, but should be able to access relevant data when needed.
- Common measures should be chosen to allow an equitable comparison of assignment portfolios during the process. (Need some measure of the degree

of “fit” or “goodness” of an individual to each particular position that can be aggregated.)

- Screening should be used to eliminate prohibited or undesirable assignments from consideration before the portfolio selection process begins.
- Decision makers should be provided with interactive mechanisms for controlling and overriding portfolio selections generated by any algorithms or models, and they should also receive feedback on the consequences of such changes.
- Assignment portfolio selection must be adaptable to group decision support requirements. (While the VCSA is the decision maker, branch or functional area proponents, and individual officers, also have a voice.)

#### Competency-Based Matching

The seemingly unconnected ideas of competencies, optimization, and portfolios need to be united into a coherent structure for competency-based matching.

Additionally, the desirable characteristics of Archer and Ghasemzadeh’s integrated framework are considered to avoid the causes behind the failure of the Army’s previous effort. First, every authorized colonel or general officer position would be evaluated to determine which of the six competencies (from Wong et. al) are relatively more or less important. This could be done using a relatively simple categorical scale (e.g. low, medium, high), or a more complicated numerical scale if sufficient supporting data is available.

Similarly, an assessment of each officer’s level of proficiency in each competency must be conducted in a similarly quantifiable (at least to three different



levels) and credible manner. Studies have shown that self-assessment often leads to either over- or under-estimation of one's capabilities, relative to assessment by superiors or subordinates.<sup>42</sup> Other feedback systems (e.g. 360-degree reviews), or a variant of the previously discussed WholeSoldier model for senior leaders may be useful to accomplish this difficult task. Once these challenges are overcome, the matching of competencies desired in a position with those possessed by officers eligible for assignment to the position could proceed in the following manner.

#### Visualization of Competency Matching

When a relatively small number of items (positions and/or officers) need to be compared and the number of variables (the competencies) is large, a radar or spider plot can be highly effective.<sup>43</sup> It is just a line graph with the categorical scale (the competencies) arranged along a circular axis, and the quantitative values (the competency level of a position and/or an individual) plotted as a distance from the center along each of the spokes, as shown in Figure 3.<sup>44</sup> The ordering of competencies is not particularly critical; however, an arrangement, once chosen, should be maintained for consistency. The six competencies provided by Wong et al are small enough to be directly visualized. As previously mentioned, this may not necessarily be the right framework to use, but this set of competencies is used for illustrative purposes. For the sake of simplicity, the ordering starts with Identity at the top and proceeds with the other competencies in a clockwise manner.

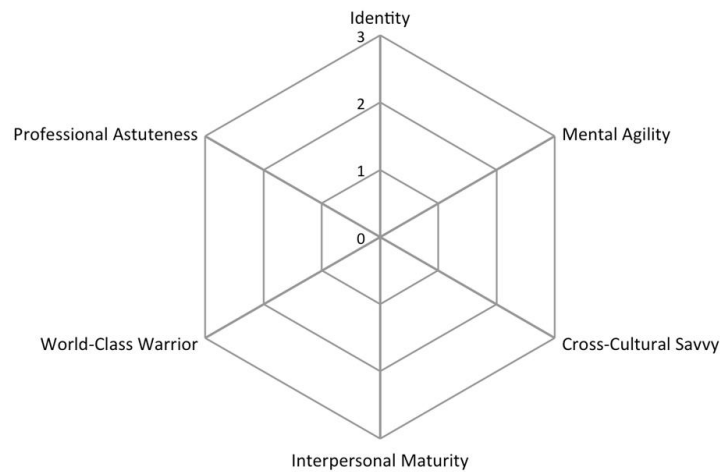


Figure 3. Radar Plot for Use in Visualizing Position Requirements and Candidate Competencies

This proposal uses four levels for each competency, as in the Senior Leader Job Competencies Survey. However, for plotting and computational purposes numeric values are assigned to the terms, as shown in Table 2.

Table 2. Numeric Coding of Competency Levels

Competency Level	Numeric Value
Expertise	3
Experience	2
Exposure	1
None	0

One problem encountered with the effort a few years ago was that, in an attempt to get the best officers assigned to them, commands and organizations overstated the requirements of some or all positions. With no safeguards beyond the integrity of those completing the survey in place, there was no incentive for an organization not to overstate the demands of each position. In many cases, this resulted in the specification equivalent of the “ideal” or maximum set of requirements, as shown on a radar plot in

Figure 4. In this and subsequent figures, initials replace the six competency labels; however, to assist with identification, they always appear on the same axes (all competencies specified as requiring the highest level).

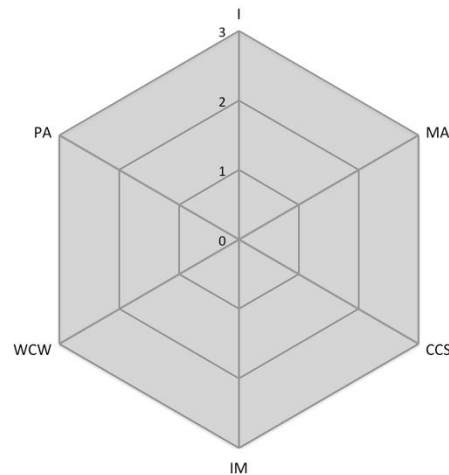


Figure 4. "Ideal" Position Requirements

Similar to the way that the senior rater portion of the current DA Form 67-9 (Officer Evaluation Report) combats rating inflation by limiting the number of checks in the “Above Center of Mass” block to less than 50 percent (and in recent history, runs about 37 percent), protection must be put in place here to overcome the natural tendency toward requirement inflation.<sup>45</sup> One plausible way to accomplish this is outlined; other variations are certainly possible. With six competencies and a maximum value of three for each competency, the maximum number of “competency points,” as shown previously in Figure 4, is 18. The “default” requirement for each senior leader position is set as two-thirds of this amount, or 12 points, as shown in Figure 5.

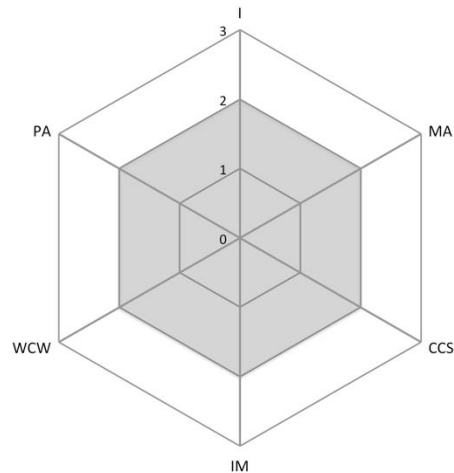


Figure 5. "Default" Requirements for a Position, Prior to Any Adjustments

Increasing the requirement from 2 (experience) to 3 (expertise) in one competency requires lowering another competency from 2 (experience) to 1 (exposure). For example, as shown in Figure 6, in order to express a preference for a higher level of competency in cross-cultural savvy, the competency level specified for world-class warrior was reduced; as a result, the total points required by this position remains at 12. However, there is a clear signal about what type of senior leader the organization wants for this position. They want someone who understands cultures, but are not as concerned about whether the officer has experience with the spectrum of operations at the national strategic level.

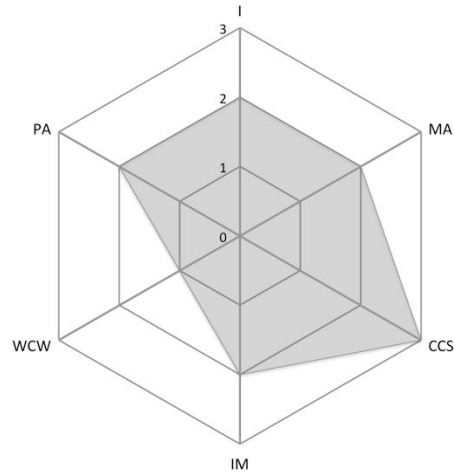


Figure 6. Offsetting of Competency Levels to Prevent Requirement Inflation

More extreme adjustment is possible, as illustrated in Figure 7. Notice that decreased levels of competency in identity and cross-cultural savvy compensate for higher levels in world-class warrior and interpersonal. The three positions shown thus far (and one more) are used in an example of a competency-matching DSS.

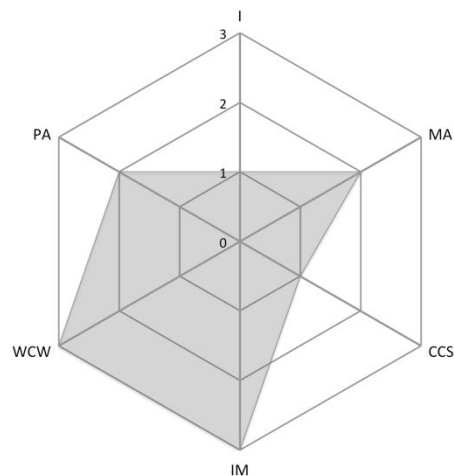


Figure 7. More Extreme Example of Competency Offsetting

One drawback of this proposal is that assignments may truly be more critical than others; for example, some positions require a colonel who has successfully completed a Centralized Selection List (CSL) command or key position assignment. A more complicated system could allow for a higher total level of competency (i.e. greater than

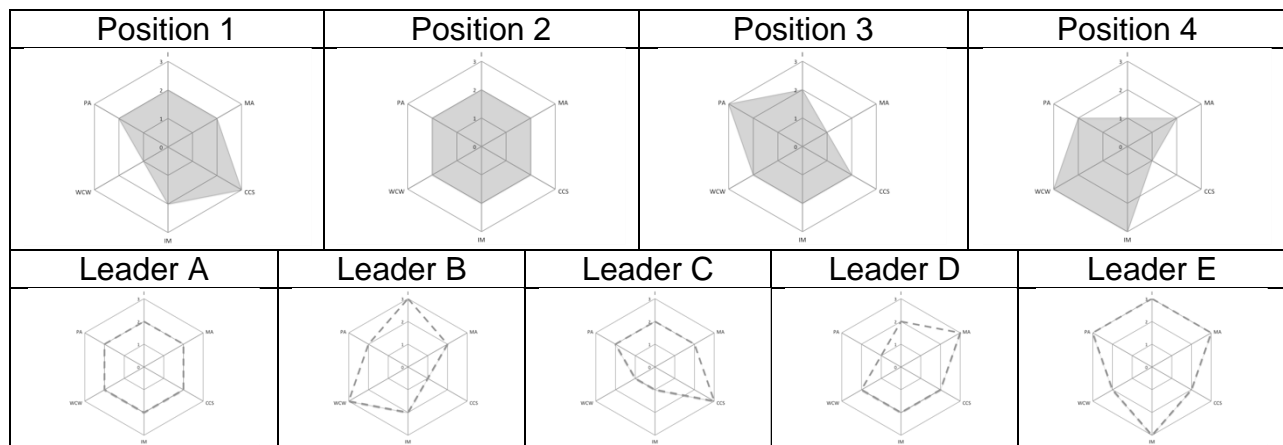
12) for certain key positions, but would require offsets in stated competency requirements from other positions in the same command or organization, again to prevent over inflation of requirements.

### Putting It All Together: An Example

#### Setting the Stage

Shown in Table 3 is a small, almost trivial example to illustrate the use of competency matching for the assignment of five senior leaders to four positions (with one officer remaining unassigned).

Table 3. Example Assignment Problem



#### A Visual Solution

Clearly, from this visualization, it appears that some officers may be best suited for particular positions. Indeed, in an assignment problem this small, it may be possible to determine the optimal solution visually, just by looking at the radar plots. In this case, a decision maker sequentially focusing on the primary demands of each position requiring expertise (CCS for Position 1, PA for Position 3, and WCW for Position 4) could produce the assignment shown in Table 4.

Table 4. Assignment by Visual Inspection

<b>Officer</b>	<b>Assigned to Position</b>
A	2
B	4
C	1
D	Not Assigned
E	3

#### Solution by Portfolio Optimization

In practice, with many more positions and officers to assign, this type of approach will not likely be practicable. To overcome this limitation, the assignment problem is formulated as an optimization model. Considering only competency matching, the DSS recommends the assignments shown in Table 5 (results of unconstrained assignment, maximizing degree of competency "fit" between positions and candidate officers).

Table 5. Assignment by Optimization

<b>Officer</b>	<b>Assigned to Position</b>
A	3
B	4
C	1
D	2
E	Not Assigned

However, this may not pass the “common sense” test. Looking back at the five candidates, it is obvious that Officer E is the strongest overall candidate, but yet this individual remains unassigned in this proposed solution. This is because the objective function specified considers the “best” fit between an officer and a position to be when the sum of the squares of the differences (between the individuals’ assessed competency levels and those specified by each position) is minimized. Unfortunately, this has the same problem as does the use of variance in financial portfolio modeling –

it penalizes both positive and negative deviations equally. When investing, people generally like financial returns that are higher than expected. Similarly, in this situation, is it necessarily awful to have someone in a position where they exceed the requirements of the position?

#### Some Complications: Additional Constraints

Additionally, there may be other constraints that have not yet been considered. For example, it may be that Officers C and E must move during this assignment cycle (e.g. they are currently students at the Army War College). Upon adding this constraint to the problem and re-solving, a different solution results, as shown in Table 6 (results of constrained assignment, ensuring the assignment of officers C and E).

Table 6. Constrained Optimal Assignment

<b>Officer</b>	<b>Assigned to Position</b>
A	3
B	4
C	1
D	Not Assigned
E	2

Because this version includes an additional constraint, the objective function value cannot possibly improve from what it was before. It can be the same, but will often be “less good” than the earlier unconstrained solution. This is because the set of possible solutions (possible solutions) will not get any larger with the addition of further constraints (limitations on the solution space).

Similarly, if the VCSA insisted that Officer E be assigned to a particular position (e.g. Position 4, which could be his executive officer), this type of “hard constraint” could also be incorporated. Adding this restriction and resolving yields the assignment shown



in Table 7 (results of further constrained optimization, ensuring that Officer E goes to Position 4) notice that Officer B is now not assigned to any position. Another option is just to remove both Officer E and Position 4 from consideration by the assignment model, which effectively enforces the directed assignment by the decision-maker.

Table 7. Assignment with Additional Constraint

<b>Officer</b>	<b>Assigned to Position</b>
A	3
B	Not Assigned
C	1
D	2
E	4

### Comparison of Solutions

Importantly, the decision maker could be provided with the effect of such a decision on the overall slating. In this case, it would result in a 30 percent increase in the amount of “misfit” between people and positions over the optimal, unconstrained solution. Table 8 shows the four assignments previously discussed, plus the worst possible assignment for comparison purposes. The numbers themselves are not particularly germane, but the relative distance from the best possible solution is useful.

Table 8. Comparison of Degree of “Misfit” Among Possible Assignments.

<b>Assignment</b>	<b>Sum of Squared “Misfit”</b>	<b>% Increase Over Optimal</b>
A1	12	20
A2	10	0 (optimal)
A3	12	20
A4	13	30
A5	20	100 (worst)

## Wrapping It Up

### Future Work

As previously mentioned, the current assignment process considers other factors, including individual officer preference and their need for an operational, joint, or enterprise assignment for development purposes. Incorporating these variables into this model is possible, but does require careful consideration. How much weight should be placed on each of the various factors? Should these weights be constant for all officers, in the spirit of fairness? Or should they somehow differ between individuals, based on their experiences and further development needs? Additionally, it would be fascinating to investigate whether reordering the competencies on the radar plot has any effect on the assignment decision outcomes. Mathematically, it makes no difference, but when the human dimension is brought into the picture, there could be a different result.

### Conclusion

As with any DSS, the goal of this tool is only to assist, but not replace, the decision maker. In this case, the intent of the proposed system is to help senior Army decision makers assign senior leaders (of ranks colonel and higher) using strategic leadership competency matching. Also, the use of visualization can, for many individuals, dramatically improve the comprehension of a large amount of information in a short period of time and communicate the impacts of potential decisions. Although this DSS includes a number of new ideas, it is more of an evolutionary revision of the current process, rather than a completely new, revolutionary methodology. While the proposed solution still requires further development, and is therefore not a turnkey solution, it does provide a framework for the Army to use in considering a different

approach to senior leader assignments that should result in improved talent management and more effective use of its most valuable resource – people.

## Endnotes

<sup>1</sup> U.S. Army War College, *How The Army Runs: A Senior Leader Reference Handbook*, 2011-2012. Carlisle, PA, 2012, 329.

<sup>2</sup> Casey Wardynski, David S. Lyle, and Michael J. Colarusso, *Towards A U.S. Army Officer Corps Strategy for Success: A Proposed Human Capital Model Focused Upon Talent* (Carlisle Barracks, PA: U.S. Army War College, Strategic Studies Institute, April 2009); Tim Kane, *Bleeding Talent: How the US Military Mismanages Great Leaders and Why It's Time for a Revolution* (New York: Palgrave Macmillan, 2012).

<sup>3</sup> U.S. Army Senior Leader Development Office, “The United States Army | Leaders,” <http://www.army.mil/institution/leaders/sld/> (accessed October 23, 2011).

<sup>4</sup> Stephen Gerras, ed., *Strategic Leadership Primer*, 3<sup>rd</sup> ed. (Carlisle Barracks, PA: U.S. Army War College, 2010), 2-3.

<sup>5</sup> *Ibid.*, 3.

<sup>6</sup> Lynn M. Scott et al, *Compensating for Incomplete Domain Knowledge* (Santa Monica, CA: RAND Corporation, 2007), [http://www.rand.org/pubs/documented\\_briefings/DB517.html](http://www.rand.org/pubs/documented_briefings/DB517.html) (accessed February 6, 2013), vii.

<sup>7</sup> *Ibid.*

<sup>8</sup> LTC Alex Wehmeyer, U.S. Army, Human Resources Manager, Colonels Management Office, telephone interview by author, December 5, 2012; LTC Jim Lorenz, U.S. Army, Operations Officer, Senior Leader Development Office, telephone interview by author, December 5, 2012; MAJ Andrew Byrd, U.S. Army, Knowledge Management Officer, Senior Leader Development Office, telephone interview by author, December 13, 2012.

<sup>9</sup> Raymond T. Odierno, “Marching Orders: America’s Force of Decisive Action” (Washington, DC: U.S. Army, January 2012), 3.

<sup>10</sup> *Ibid.*, 5.

<sup>11</sup> U.S. Army War College, *How The Army Runs*, 320.

<sup>12</sup> 10 United States Code, Subtitle A, Part II, ch. 38, sec. 663, “Joint duty assignments after completion of joint professional military education,” <http://www.law.cornell.edu/uscode/text/10/663> (accessed December 28, 2012).

<sup>13</sup> U.S. Army Force Management Activity, “Personnel Occupational Specialty Code (POSCO) Report,” <https://fmsweb.army.mil/> (accessed December 28, 2012).

<sup>14</sup> Rick Nieberding, "Colonels Management Office Overview," lecture, U.S. Army War College, Carlisle Barracks, PA, January 15, 2013, cited with permission of COL Nieberding.

<sup>15</sup> Jon Briscoe and Douglas Hall, "Grooming and Picking Leaders Using Competency Frameworks: Do They Work? An Alternative Approach and New Guidelines for Practice," *Organizational Dynamics* 28, no. 2 (Autumn 199): 37.

<sup>16</sup> Ibid., 38.

<sup>17</sup> Jeffrey D. Horey and Jon J. Fallesen, "Leadership Competencies: Are we all saying the same thing?" *Proceedings of the 45th annual conference of the International Military Testing Association*, November 2003, 3-6.

<sup>18</sup> Richard Boyatzis, *The Competent Manager: A Model for Effective Performance* (New York: Wiley, 1982); Lyle Spencer and Signe Spencer, *Competence at Work: Models for Superior Performance* (New York: Wiley, 1993); Shaun Newsome, Victor Catano, and Arla Day, *Leader competencies: Proposing a research framework* (Kingston, Ontario, Canada: Canadian Forces Leadership Institute, 2003) <http://www.cda-acd.forces.gc.ca/cffi/engraph/research/pdf/50.pdf> (accessed October 23, 2012).

<sup>19</sup> University of Victoria Co-operative Education Program and Career Services, "Information Sheet: What Makes Up A Competency?" 2011, [http://www.uvic.ca/coopandcareer/assets/docs/corecompetencies/What\\_makes\\_up\\_a\\_competency\\_infosheet.pdf](http://www.uvic.ca/coopandcareer/assets/docs/corecompetencies/What_makes_up_a_competency_infosheet.pdf) (accessed October 23, 2012).

<sup>20</sup> Ibid.

<sup>21</sup> Loren Applebaum and Matthew Paese, *What Strategic Leaders Do: The Nine Roles of Strategic Leadership* (Pittsburgh, PA: Dimension Development International, Pittsburgh, PA 2003).

<sup>22</sup> Aaron M. Zook, Jr., *Military Competency-Based Human Capital Management: A Step Toward the Future*, Strategy Research Project (Carlisle Barracks, PA: U.S. Army War College, March 15, 2006).

<sup>23</sup> Horey and Fallesen, "Leadership Competencies," 3-6.

<sup>24</sup> Horey et al, *Technical Report 1199: A Criterion-Related Validation Study of the Army Core Leader Competency Model* (Fort Belvoir, VA: United States Army Research Institute for the Behavioral and Social Sciences, April 2007) 5-6.

<sup>25</sup> Robert A. Dees, Scott T. Nestler, and Robert Kewley, "WholeSoldier Performance Appraisal to Support Mentoring and Personnel Decisions," *Decision Analysis* 10 no. 1 (March 2013).

<sup>26</sup> Ralph L. Keeney and Howard Raiffa, *Decision Making with Multiple Objectives: Preferences and Value Tradeoffs*. (New York: Wiley, 1976), 50-51.

<sup>27</sup> Craig W. Kirkwood, *Strategic Decision Making: Multiobjective Decision Analysis with Spreadsheets*. (Pacific Grove, CA: Duxbury Press, 1997), 18.

- <sup>28</sup> Horey et al, *Technical Report 1199*, 32.
- <sup>29</sup> Leonard Wong et al, *Strategic Leadership Competencies*. (Carlisle Barracks, PA: U.S. Army War College, Strategic Studies Institute, 2003), iii.
- <sup>30</sup> Ibid.
- <sup>31</sup> Briscoe and Hall, "Grooming and Picking Leaders," 48.
- <sup>32</sup> Gerras, ed., *Strategic Leadership Primer*, 62-66.
- <sup>33</sup> Harry M. Markowitz, *Portfolio Selection: Efficient Diversification of Investments*. (New York: John Wiley, 1959).
- <sup>34</sup> Norm P. Archer and Fereidoun Ghasemzadeh. "An integrated framework for project portfolio selection," *International Journal of Project Management* 17, no. 4 (August 1999): 207-216; Robert G. Cooper, Scott J. Edgett, and Elko J. Kleinschmidt, "New product portfolio management: practices and performance," *Journal of Product Innovation Management* 16, no. 4, (July 1999): 333-351.
- <sup>35</sup> Johnathan Mun, *Modeling Risk + DVD: Applying Monte Carlo Simulation, Strategic Real Options, Stochastic Forecasting, and Portfolio Optimization*, (Hoboken, NJ: John Wiley and Sons, 2010), 28.
- <sup>36</sup> U.S. Department of Defense, *Capability Portfolio Management*, DoD Directive Number 7045.20 (Washington, DC: U.S. Department of Defense, September 25, 2008).
- <sup>37</sup> U.S. Army Senior Leader Development Office, "2007 Senior Leader Job Competency Survey," <https://www.srleaders.army.mil/portal2/UI/InformationalPage.aspx?PageId=264>, (accessed February 6, 2013).
- <sup>38</sup> U.S. Department of the Army, *Commissioned Officer Professional Development and Career Management*, Pamphlet 600-3 (Washington, DC: U.S. Department of the Army, December 2006 Draft); U.S. Department of Defense, *Strategic Plan for Joint Officer Management* (Washington, DC: U.S. Department of Defense, April 2006); U.S. Department of the Army, *Army Leadership*, Field Manual 6-22 (Washington, DC: U.S. Department of the Army, November 2006); *Survey of General Officer Positions*, (Santa Monica, CA: RAND Corporation, 2000).
- <sup>39</sup> MAJ Andrew Byrd, U.S. Army, Knowledge Management Officer, Senior Leader Development Office, telephone interview by author, December 13, 2012.
- <sup>40</sup> Ibid.
- <sup>41</sup> Archer and Ghasemzadeh, "An integrated framework," 207-216.
- <sup>42</sup> Robert P. Vecchio and Robert J. Anderson, "Agreement of Self-Other Ratings of Leader Effectiveness: The role of demographics and personality." *International Journal of Selection and Assessment* 17 no. 2 (June 2009): 1-15; David W. Bracken, Carol W. Timmreck, and Allan H.

Church, *The Handbook of Multisource Feedback: The comprehensive resource for designing and implementing MSF processes* (San Francisco: Jossey-Bass, 2001), 23.

<sup>43</sup> John Chambers et al, *Graphical Methods for Data Analysis*. (Belmont, CA: Wadsworth, 1983), 158-162; National Institute of Standards and Technology, *e-Handbook of Statistical Methods*. (Gaithersburg, MD: NIST/SEMATECH), <http://www.itl.nist.gov/div898/handbook/eda/section3/starplot.htm> (accessed October 23, 2012).

<sup>44</sup> Stephen Few, *Information Dashboard Design: The Effective Visual Communication of Data* (Sebastopol, CA, O'Reilly, 2006), 152.

<sup>45</sup> U.S. Department of the Army, *Evaluation Reporting System*, Pamphlet 623-3, June 5, 2012; Howard B. Bromberg, "Officer Evaluation Report Update," focus group discussion, U.S. Army War College, Carlisle Barracks, PA, November 2, 2012, cited with permission of LTG Bromberg.